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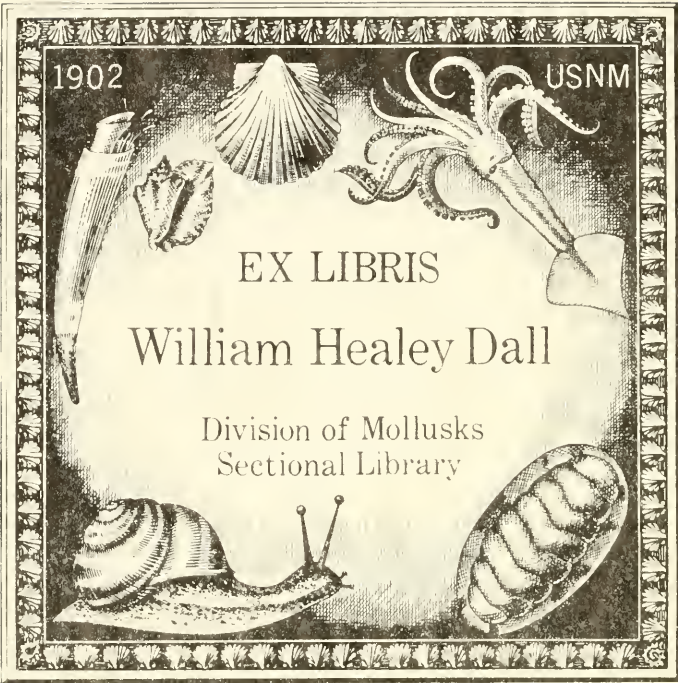
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DESCRIPTIONS

OF SOME NEW

TERRESTRIAL AND FLUVIATILE SHELLS

OF

NORTH AMERICA.

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By THOMAS SAY, F. M. L. S., &c.

NEW HARMONY, INDIANA:

1840.





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Mollusks

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THE following Descriptions of some new Terrestrial and Fluvial Shells of North America, were originally published in the *Transylvania Journal*, also in the *Disseminator*, a weekly periodical published at New Harmony, Indiana, prior to the publication of the *American Conchology*, into which they were to have been copied with illustrative Drawings.

This object having only been partially accomplished, it seems necessary for their preservation and more general circulation, to have them republished in a more collective form.

The following will be found a complete list of such as were omitted in that work.

I regret exceedingly my inability to accompany the figured species with Drawings.

If any specimens of species here described are not contained in the Cabinet of the Academy of Natural Sciences, they will most probably be found in my own private collection, which has not been opened since it was put up five years since. If this should be the case, it will afford me much pleasure to place them in that collection for future reference.

LUCY W. SAY.

APRIL, 1840.

UNIO.

U. cicatricosus. Shell, transversely subovate: *posterior margin* very short, hardly extending beyond the beaks, regularly rounded: *anterior margin* rounded, or very obtusely angulated: *umbo*, elevated: *fosset*, behind the beaks, moderate, wider than long, not angulated behind: *disk* deeply wrinkled or undulated with a series of transverse elevations, sometimes separated by small longitudinal lines, so as to resemble, as it were, drops of a liquid, extending from the umbo to the base: *within*, white: *teeth*, direct.

Length, about two inches and nine-tenths; breadth, three inches and seven-tenths. Convexity, nearly two inches. Inhabits Wabash.

A common species, distinguishable by the single series of transverse elevations on the middle. The allied species are *U. cartive* and *incurvus*, Nob.*; but, besides other characters, it may be distinguished from either by the less prominent nates, the smaller fosset, and the series of the disc. Amongst the numerous species sent to me by Mr. Barnes, previously to the publication of his paper, was a small valve of this species, but it was then referred as a variety to the convenient but obsolete receptacle of this genus, *U. crassus*.

U. velum. Transversely elongate suboval, compressed, very fragile and thin, olivaceous, radiated with green; *umbo*, not prominent, placed far backward; *base*, subrectilinear; *anterior margin*, more widely rounded in the posterior margin, with a prominent membrane, crenate, at its tip; *within*, margined with opake white; *primary teeth*, a conic one in the left valve, with a recipient sinus in the right valve; *lateral teeth*, simple and single in each valve.

Length, more than half an inch; breadth, less than one inch and one fifth. Inhabits Kentucky River.

This pretty species is remarkable in having the epidermis extended into a broad, crenate membrane, terminating the anterior margin. In the form of the teeth and the white interior margin, this shell resembles the *U. monodonta*; and, in fact, I was led from these characters to suppose it the young

* I think these two species have long since been published under the names of *cordata* and *intorta*. I therefore suppress the descriptions here. I may remark, further, that the descriptions of UNIO here given, were chiefly made about three years since, together with nearly twenty others, which I suppressed, as the species were either anticipated or subsequently made known in the works of recent naturalists.

of that shell, but afterwards finding the young, and perceiving that the umbo was not so far backward as in the present shell, and the remarkable membrane, induced me to describe it as new. It occurred on the rocky shore of the river, and appears to be rare.

U. purpuratus. Transversely oval, slightly oblong, in some specimens with a little tendency towards ovate; dirty yellowish or fuscous, obscurely radiate with blackish-green: *beaks*, behind the middle, hardly raised: *anterior edge*, rounded, or rather, composed of two nearly rectilinear lines: *posterior margin* rounded: *hinge margin* regularly rounded: *cavity of the hinge membranes* (behind the beaks) narrow, but very obvious: *basal margin* arquated, a little compressed in the middle, and sometimes almost contracted in that part: *within*, purple; *margin* livid; *anterior submargin* iridescent: *primary teeth* nearly direct, rather thick, striated; *lateral teeth* hardly extending beyond the sinus of the hinge margin.

Length, one inch and three-fifths; breadth, three inches and one-tenth. Convexity, over nine-tenths of an inch. Var. a. Within white: Var. b. Within dull yellowish. Inhabits Mexico.

For this species, I am indebted to Mr. Maclure. It was found by William Bennett in a stream a few leagues from Vera Cruz, where it is abundant. It resembles *U. purpureus*, Nob., but differs in having the teeth more direct; in the lateral teeth being shorter, with respect to the sinus of the hinge margin; in having the greatest breadth at the middle of the anterior margin, &c.

In the young and middle aged specimens, the radii are very distinct, but are obsolete in old specimens. The umbones are widely decorticated in age, but seldom are they so deeply eroded as to disclose the waxen colored stratum.

It may be considered as the Mexican analogue of the *purpureus*.

U. metallicus. Transversely ovate, very slightly oblong; dull yellowish tinged with coppery, particularly on the umbones: *beaks* slightly elevated, not decorticated, undulated; the undulations obsolete in their middles, and not extending on the umbo; placed far back: *hinge margin* prominently arquated: *posterior margin* very short, rounded: *anterior margin* rounded: *basal margin* subrectilinear: *within* liver color: iridescent on the anterior margin: *cardinal teeth* rather long, somewhat tuberculous, not very prominent: that of the right valve not

abruptly terminated before, but gradually diminishing (as that of some *Alasmodontas*;) *lateral teeth* rather slender.

Length (at the anterior tip of the lateral teeth) one inch and one-fifth; breadth, nearly two inches and one-fifth. Convexity, four-fifths of an inch. Inhabits Mexico.

This shell is remarkable for the coppery tint, which is more obvious on the umbones. It was obtained in Lake Chalco? and was presented to me by Mr. Maclure. In the young state it is radiate with green before, and the adult has a very thick granular deposit of carbonate of lime, on the anterior half of the shell, which is in the water and above the mud. The species appears to be abundant.

U. subrostratus. Transversely elongated. subrostrated, radiated.

Inhabits Wabash.

Transversely elongate subovate, brownish or pale ochreous, with numerous dark green radii: *beaks* but little elevated with a few, small angular, concentric lines: *ligament margin* a little compressed: *anterior margin* somewhat elongated, hardly subrostrated: separated by an obtuse angle from the ligament margin: *base* arcuated: *posterior margin* rounded: *within* white, often slightly tinted with flesh color; somewhat iridescent on the margins, particularly the anterior margin: substance of the shell not thick: *teeth* very oblique, crested.

Length, one inch and two-fifths; breadth, three inches and one-fifth. Convexity, hardly over one inch.

This may be said to be the analogue of the *U. nasutus*, Nob., of the Western waters. The rostrum however is not so definite, and it is a more convex shell. The aged shell is dark brown, but near the beaks reddish brown.

NOTE.—A short time since, I began a review of the American species of *UNIO* hitherto described by naturalists, in which it appeared to me that much yet remains to be done, notwithstanding the laudable attempts that have already been made to rectify the synonymy: but on advancing somewhat in the undertaking, I found myself so much at a loss for books and other means of reference in my insulated residence, that I was compelled for the present to relinquish it. The following notice, however, I have concluded to publish, because it relates to the most common species in our eastern waters.

U. purpureus, Nob. The propriety of retaining this name has recently been much questioned by two of our conchologists, but as I do not think that, as yet, its stability is in any degree problematical, I shall endeavour to show on what my opinion is founded. Prof. Green remarks, "I have no doubt

that the species known commonly by the name of *Unio purpureus*, is the same with the *Mytilus fluviatilis* figured by Lister, t. 157, fig. 22, and described by Dillwyn, from Gmelin, under that name. I have, therefore, been obliged by the rules of nomenclature, now so strictly observed in Natural History, to restore the original specific name of Gmelin to this interesting shell, so well known by the name of *purpureus*." (Contrib. of the Macl. Lyc. Vol, 1. No. 2.)

I cannot discover any specific similarity of the *purpureus* to this very doubtful figure, except that Lister describes it as "*subruber exinterna parte*;" certainly the shape of the figure is more like the *cariosus* or *ovatus* Nob. than the *purpureus*, and this assimilation is rendered more like, when we take into consideration the depressed anterior margin of the shell that appears associated with it on the same page, the *Potamophila subvirdis* Gmel. But it is all mere conjecture, for even the genus of the figure cannot now be determined, though it is probably an *Anodonta*, and as the description of the *fluviatilis* was made out by Gmelin entirely from that figure, I should consider it as worthless, as such a latitude in describing is reprehensible.

It is nevertheless evident that, from the situation Dillwyn assigns to the *fluviatilis*, he considered it an *Anodonta*, for, according to my Mss. notes wherein the subject of the *Nayades* was at first discussed, he places *fluviatilis* next to *cygneus*, and it is followed by *stagnalis* and *anatinus* and *fucatus*, all *Anodontas*. Hence, if all this be correct, the *rectus*, *triangularis* or *æsupus* are more nearly related to *purpureus* than the *fluviatilis* can be; if, indeed, such a species as the latter exists in nature.

M. Lea observes, "Dillwyn describes this shell, under the name of *Mya complanata*, and refers to this figure." (Lister, t. 150, f. 5.) "Dr. Green supposed this shell, so well known to all our conchologists under Mr. Say's name *purpureus*, to be the *Mytilus fluviatilis* described by Dillwyn from Gmelin, and referred to Lister, t. 157, f. 12. I differ, however, in this opinion: 1. Because it is not described as being toothed. 2. Gmelin says, 'habitat in Europæ aquis dulcibus.' 3. The *complanata* answering, in description, better to our shell, and being the first figured and described. It appears somewhat singular to me, that the observant and able zoologist, Mr. Say, had not been struck with the similitude of our shell to Lister's figure and description. There is no species more common in all our fresh waters, east of the Alleghany Mountains, than this; and nothing could be more likely than that it should be among the first to be taken to Europe by the early voyagers to America. In accordance, therefore, with the rules of no-

menclature, I have inserted the name of *complanatus* to the shell described by Mr. Say under the name of *purpureus*."— (Trans. Philos. Sc. Vol. 3, N. S.)

I have not, at present, the means of referring to Dillwyn's work, and I can therefore only speak in relation to Lister's figures, t. 150, above mentioned, and consequently, to any description founded on those figures. On reading the above, I was myself struck with the singularity of the fact, that I should have overlooked the similitude, if any, between the shell and a figure with which I was equally well acquainted. But on a re-examination of the figure, I am in my turn surprised that any one should have thought of bringing the *purpureus* into comparison with it. How that figure can appear so differently to different conchologists, I know not; but certain it is that Gmelin quoted it, with a saving mark of doubt, for *Mytilus cygneus*!! I quoted it in the year 1819 for *Unio crassus*. Barnes also quoted it for the *U. crassus*, and now it is supposed to represent the shell in question.

After a careful comparison of the shell with that figure, I cannot, with any moderate concession of character, make it correspond; and, moreover, I cannot think that any one will be more successful in this respect than I have been. But even if a strong likeness really existed, two words of Lister's description, quoted by Mr. Lea himself, puts the matter altogether beyond a doubt. The words, "admodum crassus," engraved on the same plate with the figures, admit of no misconstruction, and no approximation of the *purpureus*, (which Mr. Lea says, p. 33, note, "is never ponderous,") but agree very well with a variety of the unfortunate *U. crassus*; for which I originally quoted the figures, and which is "admodum crassus." For these reasons, I think that cause has not yet been shown why the name should be changed; and, therefore, agreeably to any rules of modern nomenclature, the name *purpureus* seems fated to withstand all attacks, unless, indeed, it can be proved, from Mr. Dillwyn's description itself, that he meant this shell, when he described his *complanatus*, and not that of the figure to which he refers.

ALASMODONTA.

A. sculptilis. Shell transversely suboval, with green radiations: *umbo* and *summit* with six or seven rather sharp undulations, which are transverse, rectilinear, at the extremities abruptly arquated or reflected: *dorsal* and *anterior margin* from

the summits with numerous, slender, slightly elevated lines bending in different directions.

This is evidently a young shell, but we know nothing of the adult. The teeth are more like those of the *undulata*, Nob. than any other species, but the form and sculptured anterior margin amply distinguish it.

It was brought from Virginia by Mr. J. Lukens, and by him presented to me.

A. edentula. Shell transversely oblong-oval, somewhat compressed, dark olivaceous or brownish, obsolete radiated (in the young:) *nates* behind the middle but remote from the posterior edge, but little prominent, undulated: *anterior margin* not remarkably compressed, and not radiated: *within* white, margined with opaque white more or less distinct, but sometimes obsolete: *teeth* obsolete, but the peculiar curvature beneath the beaks shows their locality.

Length, one inch and seven-tenths; breadth, three inches. Convexity, one inch. Inhabits Wabash River.

Approaches nearest to *A. marginata* Nob.; but the want of teeth, and the simple anterior margin, at once distinguish it.

CYCLAS.

C. edentula. Shell transversely oval, inæquilateral, with somewhat elevated and regular transverse lines: *beak* not elevated above the general surface; *cardinal tooth* very small, lincolor, oblique and not elevated higher than the edge of the hinge margin: *colour* brown: *umbones* decorticated.

Length, seven-twentieths of an inch. Breadth, two-fifths of an inch. Inhabits Canandaigua Lake.

This is distinguishable by the diminutive teeth, which are not visible in a profile view of the hinge.

C. transversa. Transversely oblong subovate, subinæquilateral: *anterior margin* decidedly more widely rounded than the posterior margin: *beak* obviously elevated above the general curvature: *cardinal teeth* double, distinct.

Length, over one-fourth of an inch; breadth, nine-twentieths of an inch. Inhabits Kentucky.

This shell is more transverse than even the *similis*, Nob.

C. triangularis. Transversely oval subtriangular, subæquilateral: *disk* with transverse, rather raised lines: *beak* somewhat prominent; elevated much beyond the general curvature: *teeth*, viewed in profile, distinct and elevated.

Length, two-fifths of an inch; breadth, half an inch. Inhabits Mexico.

The apex of this species is not so acutely elevated as that of the *calyculata*, Drap., but the shell is more drawn up to an angle in that part.

ANODONTA.

A. implicata. Transversely oblong-oval, subcylindric, yellowish olive: *disk* convex, the wrinkles not very prominent; *umbonial slope* hardly presenting a very obtuse angle or curve: *beak* but little elevated, obsoletely undulated: *hinge margin* nearly parallel to the base, diverging a little from it anteriorly, and terminating in a slight, obtuse angle: *within* deeply concave.

Length, one inch and a half; breadth, three inches and a fifth; convexity, one inch and three-twentieths. Inhabits a pond in Danvers, Massachusetts.

For this species, I am indebted to Dr. Harris, of Milton. It is more cylindrically convex than any I have met with.

As respects the proportions of length and breadth, it resembles *A. elongatus*, Swains.; but the umbones are less elevated and not placed so far back as in that species. It is also a thinner shell, and the dorsal view is altogether different, exhibiting a regular curvature.

A. lugubris. Transversely oblong-oval, subovate, blackish-brown: *disk* convex, acutely wrinkled: *umbonial slope*, with a distinct elevation or line: *beak*, slightly elevated, with two or three sinuous undulations: *within*, white: *margin*, particularly before, livid: *hinge margin*, somewhat parallel to the base, at the sinus rather nearer the base than at the beak, or as near.

Length, two and a half inches; breadth, four inches and seven-tenths. Convexity, one inch and four-fifths. Inhabits Cumberland River.

For this specimen I am indebted to Mr. Lesueur. I cannot make it agree with the *A. purpuracens*, Swains., though it bears some resemblance to that species. It is, however, a more

convex shell, the beak not so far back, and much more obtusely rounded before. The few specimens in the cabinet of my friend Lesueur are not tinged with purple within.

It has some resemblance to Lister's fig. 9, of pl. 154, which Dillwyn calls *fucatus*, but the present is a longer shell, with somewhat more elevated beaks, more rounded at the base, &c.

A. grandis. Shell very large, subovate: *disk* unequally wrinkled and undulated transversely, dark yellowish brown: *umbo* elevated: *beak* slightly elevated, with, generally, two or three small sinuous, acute undulations: *hinge margin* slightly arquated, sometimes nearly rectilinear, somewhat angulated at its anterior termination, thence the edge descends by a nearly rectilinear, or slightly concave line to the anterior margin, which is considerably narrowed: *sinus* of the hinge margin, concave: *posterior margin* widely rounded: *within* white, margined, particularly before, with dusky.

Length, nearly five inches; breadth, over seven and a half inches. Convexity, three and a quarter inches. Inhabits Fox River of the Wabash.

The great size of this species, distinguishes it from any other I have met with. A favorable specimen at first view, corresponds with the figures on pl. 205 of the Encycl. Meth., named by Lamarck, *A. tropizialis*; but the differential character is, in the words of Lamarck, "La sinus de la lame cardinale est grande. et form un angle reentrant, aigu." He described from a specimen in his own collection, and as the figures exhibit this character, there can be no doubt that our shell is a distinct species.

The finest specimen I have seen was presented to me by Mr. Oliver Evans, who obtained it in Fox River, which is a serpentine arm of the Wabash.

A. inapura. Subovate, fragile, a little compressed, dull yellowish brown: *umbo* much eroded, exhibiting a chalky white stratum. then a dull wax yellow surface: *beak* a little undulated, hardly elevated above the general curvature: *hinge margin* forming a large angle with the base, being anteriorly elevated into an obtuse angle, whence the edge descends almost rectilinearly to the anterior margin, which is equally rounded with the posterior margin.

Length, one inch and three-tenths; breadth, less than two inches. Convexity, less than seven-tenths. Inhabits Mexico.

I obtained several specimens in a ditch beside the road between the Capitol and Tacubya. It is perfectly distinct from any species of this country that I have seen. It cannot be the *A. glauca*, Lam., as that shell is represented to have "*natibus prominulis*."

A. imbecillis. Transversely oblong subovate, very thin and fragile: *disks* convex, green, with darker green obsolete rays, and three obvious rays on and above the umbonial slope: *hinge margin* rectilinear, terminating before in an angle: *beaks* a little undulated and not elevated above the general curvature: from the anterior tip of the hinge margin, the slope is rectilinear to the anterior margin: *within* bluish white, iridescent before; *hinge* perfectly rectilinear—*posterior margin* rounded.

Length, over one inch. Breadth, over two inches. Convexity, three-fifths of an inch. Inhabits Wabash River.

By these dimensions, it is evident that the present species is proportionally broader than any other of our Anodontæ of the same length. It does not appear to be common in this river, or it may have been overlooked or rejected as a young *Unio* by our collectors, without examination. On this account, perhaps, I have only two specimens, of which the smaller is less than half the size of the present. It may be a young shell, but if so, in the adult state it must be much elongated, inasmuch as its proportions are now nearly those of the full grown *cygnea*, Linn. It cannot be the *elongata*, Swainson, as the shape differs, and that is a thick shell with prominent umbones.

HELIX. LINN.

H. lucubrata. Shell subglobose depressed, reddish brown, polished, subtranslucent: *whirls* over four, much wrinkled: *spire* much depressed, convex: *suture* moderate: *beneath* paler: *umbilicus* open, rather large: *aperture* nearly orbicular: *labrum* simple.

Greatest width, one inch. Inhabits Mexico.

Closely allied to *H. inornata*, Nob., but the umbilicus is much larger, and the aperture is more accurately rounded: the color is nearly the same, excepting that in the present, it is of a deeper shade.

H. suppressa. Shell subglobose, depressed, pale horn color, polished, somewhat pellucid: *body-whirl* opaque, whitish near the aperture: *volutions* six, wrinkled: *spire* convex: *aperture* sublunate, narrower beneath: within, a prominent tooth near the base, distant from the margin: *labrum* simple: *umbilicus* rather small, orbicular, profound: *region of the umbilicus* indented.

Greatest breadth, more than one fifth of an inch. Inhabits Pennsylvania.

I found a few specimens of this shell on the farm of my friend Mr. Reuben Haines at Germantown.

With the exception of size and the armature of the throat, it has somewhat of the habit of *H. ligera*, Nob.; but the opacity of the body-whirl near the aperture, is much more remarkable: These characters, combined with that of the tooth, will readily distinguish this species from any other.

(POLIGYRA.)

× *H. fatigiata*. Shell convex beneath, nearly plane above, the spire being hardly perceptibly elevated: *whirls* a little over six, compressed, acutely carinated, crossed by numerous, raised, equidistant lines, which form grooves between them: superior surface not at all convex: *aperture* subreniform: *labrum* reflected, regularly arquated, describing two-thirds of a circle; within two toothed, lower tooth conic obtuse, superior tooth compressed, transverse, placed farther within the aperture than the inferior one, from which it is separated by a wide and deep and obvious sinus: *labrum* with a very profound duplicature, which has a concave surface, but no emargination near its acute tip: *beneath* exhibiting only two *volutions*, without any distinct groove on the external one near the suture; beneath the carina the elevated lines are obsolete.

Greatest breadth, seven-twentieths of an inch.

Found by Mr. Lesueur in the vicinity of New Harmony. It is very closely related to that species which I described under the name of *plicata*; the character of the mouth is very similar, but in that shell, such is the situation and form of the teeth of the labrum, that at first view they do not seem to be separated by a remarkable sinus, and the inferior tooth is compressed and larger than the other; the duplicature of its labium is emarginate near the tip. The present species is also larger carinated, and the elevated lines are obsolete below the carina.

Specimen 11707, 25. 1. 1871

HELICINA OCCULT.

Carinated; carina almost concealed on the spire and nearly obsolete on the body whorl.

(H. OCCULTA. Nob. Trans. Journ. of Medicine, Vol. 4, p. 529.)

Whorls about five, carinate, or with an acute shoulder which is almost concealed on the spire by the suture; it becomes more obtuse and almost obsolete, or even impressed, on the body whorl, but near the labrum it is again very obvious: the whole surface has slightly elevated, somewhat regular lines, forming grooves between them, across the whorls, and there is an appearance of revolving lines on the body whorl, particularly beneath: *labrum* entire, thick, a little reflected, obtusely a little more prominent towards the base, but not angulated.

All the specimens that I have found are dead and bleached. They occur abundantly in the rugged and abrupt "bluff," half a mile below New Harmony, near the river bank, with many *Helices*, that are commonly found in the Western States. They are much the same size, or even a little larger than the *Helicina orbiculata*, Nob.; which species is destitute of carina and of prominent wrinkles or elevated lines, its *labrum* is reflected, but not thickened, with a distinct angle near its base.

MELANIA, BRUG.

M. phuristriata. Turreted; with numerous transverse, elevated lines.

Inhabits Mexico.

Shell oblong-conic, tapering, more or less tinged with rufous: whorls eight or ten, without much convexity, with elevated, numerous, revolving lines, about fifteen on the body whorl and five on those of the spire: suture of the spire impressed, often indistinct; of the body whorl very deeply indented; apex with a small truncation: *labrum*, near the base, not remarkably produced: base without any rudiment of a sinus: body whorl slightly ventricose.

Length, one inch and one-fourth. Greatest breadth, eleven-twentieths.

It was sent to me from Mexico by Mr. Wm. Maclure. It may be distinguished from *multilineata*, Say, by its superior magnitude, greater elevation of the striæ, less prominence of the *labrum* near the base, &c.

MELANIA, LAM.

✓ *M. nupera*. Oblong-oval; *volutions* five, slightly rounded; *body whirl* with about three revolving series of subequal, equidistant, subacute granules or tubercles not higher than wide, occupying the superior half of the surface; second volution with but two series, remaining volutions with slightly elevated, longitudinal lines, instead of tubercles; but these are often obsolete: *spire* towards the tip decorticated: *suture* not deeply impressed: *aperture* longer than the spire; sinus of the superior angle profound: *labrum* concave, with a callus near the superior angle: *columnella* with a slight, obtuse, hardly prominent angle above the sinus, which is obvious: *labrum* not abbreviated above, nor much produced near the base.

Length, four-fifths; breadth, less than half an inch. Inhabits the Wabash River. Var. a. Body whirl with but one series of tubercles. Var. b. Body whirl with four or more series of tubercles.

This species is common in the Wabash River. The spire is almost invariably so completely decorticated towards the apex, that no trace of the longitudinal lines remains; in the young only are these lines distinct, and even in these they are frequently wanting.

M. cancellata. Shell rather slender, attenuated: *volutions* convex, with about twenty-six reclivate, longitudinal, elevated lines, crossed by about eighteen revolving ones, the eight or nine towards the base crowded.

Length, more than four-fifths of an inch. Inhabits Florida.

For this shell I am indebted to Capt. Leconte, who informed me that he obtained it in St. John's River. It differs from all our species in the numerous longitudinal and transverse elevated lines, with the exception of the *catenaria*, Nob., than which it is of a much more elongated and attenuated form.

✓ *M. semicarinata*. Shell small, rather slender: *spire* attenuated, acute; the four apical volutions carinate below: *volutions* about eight, somewhat convex: *suture* moderately impressed: *surface*, especially of the body-whirl, slightly wrinkled: *within* slightly tinted with reddish brown.

Length, less than half an inch. Inhabits Kentucky.

Occurred in great numbers in a small stream. It may be distinguished from our other species by its small size, combined

with the existence of a carinated line only in its young state having increased to four volutions, the carina is no longer formed.

M. undulata. Shell large, elevated, conic, brownish, with a broad, equally impressed band; inferior boundary of the band elevated and deeply crenate; superior boundary elevated and sometimes nodulous: *volutions* at least eight, not convex: *suture* not impressed, hardly obvious, undulated by revolving on the inferior crenate boundary of the impressed band: *labrum*, near the base, much protruded: *sinus* very obtuse.

Length, one inch and four-tenths. Inhabits the Ohio.

I observed this large species to be abundant in Kentucky River, when traveling in that State two years since with Mr. Maclure.

It seems to approach nearest in character to the *canaliculata*, Nob., but its rough appearance will distinguish it even at first sight.

M. stygia. Shell robust, ovate conic, black: *spire* rather longer than the aperture, eroded at tip: *volutions* five, hardly convex: wrinkles obsolete, excepting a few larger ones: *suture* not profoundly indented: *aperture* narrowed at base into a slight sinus and subangulated; much widest in the middle: *labrum* much arquated in the middle.

Length, three-fourths; greatest breadth, less than half an inch.

A specimen of this shell was given to me by Mr. Lesueur: several were found in Cumberland River, by Dr. Troost. In form it resembles *armifera*, Nob., more than any other species, but that shell is armed with tubercles and ornamented by colored lines, its suture also is only a simple impressed line.

M. laqueata. Shell oblong: *spire* longer than the aperture, elevated, conic, acute: *volutions* moderately convex, with about seventeen regular, elevated, equal, equidistant costæ on the superior half of each volution extending from suture to suture: and but little lower, and becoming obsolete on the body whorl: *suture* moderately impressed: *sinus* obsolete.

Length, four-fifths of an inch.

This species was found by Dr. Troost in Cumberland River. Aside from a difference in form, it may be distinguished from *cancelata*, Nob., and *catenaria*, Nob., by being altogether des-

titute of elevated revolving lines. The young shell is carinated. I am indebted to Mr. Lesueur for a specimen.

M. obovata. Shell subobovate, dark brown or blackish; *volutions* nearly five: *spire* remarkably rounded, short: *body whirl* with a very obtuse, slightly indented band or undulation a little above the middle: *aperture* more than twice the length of the spire, narrow: *labium* polished, with a callous above: *labrum* not projecting near the base, subrectilinear from the shoulder to the basal curve, very convex at the shoulder; base rounded and without indentation.

Animal, foot rounded, or rather longer than wide, equally rounded before and behind; above yellowish-white, lined with black lines.

Inhabits Kentucky River, and some other tributaries of the Ohio. Length, three-fourths; breadth, nearly half an inch. Var. a. Indented band almost obsolete.

The spire, and even a part of the body whirl in old shells, are sometimes remarkably eroded, as in the *M. (anculotus) prerosa*, Nob., and, indeed, the general appearance is such, that at a little distance, and without particular observation, it might be readily mistaken for that shell; but the form is less globular and the aperture is altogether different. I found it very abundant in Kentucky River in company with that shell and other species of *Melania*. I also observed it at the Falls of the Ohio. Lesueur and Troost obtained specimens in Fox River of the Wabash. When young, the undulation is hardly visible, and the shell is often of a dull yellowish color, which on the larger volutions becomes gradually of the characteristic color.

M. integra. Subglobose, horn color; *volutions* rather more than three, rounded, obsoletely wrinkled: *spire* very short, less than half the length of the aperture: *suture* rather deeply impressed: *body whirl* large: *aperture* dilated, ovate, acute above: *columnella* flattened, polished: *labrum* regularly rounded: *base* regularly rounded, without any undulations or sinus: *umbilicus* none: *operculum* obviously spiral.

Length, nearly one-fifth of an inch.

Animal, foot longer than wide, rounded behind; with the anterior angles a little excurved: eyes black, conspicuous; tentacula rather long and slender.

Inhabits Ohio River and many of its tributaries.

This is a very common little shell, abounding more in many

situations than any other species, particularly in the vicinity of the Falls of the Ohio.

It may readily be mistaken for a young shell.

M. isogona. Subglobose, horn color: *volutions* about four, rounded, obsoletely wrinkled: *spire* very short, about one-third the length of the aperture: *suture* profoundly impressed, so as to cause a shoulder on the whirls: *aperture* much dilated, oval, being as obtusely rounded above as at base: *umbilicus* linear, distinct: *operculum* obviously spiral.

Length, under three-tenths of an inch. Inhabits Bear-Grass Creek, near Louisville.

Not very numerous. It is remarkable by the oval form of the much dilated aperture, and by the deeply indented *suture*. In old specimens, the base is almost acutely angulated.

M. trilineata. Subglobose oval, yellowish, more or less tinged with brown: *volutions* about four, rounded, somewhat wrinkled: *spire* short, rather more than half the length of the aperture: *suture* not very deeply impressed: *body whirl* with three brownish black revolving lines, of which the two inferior ones are somewhat nearest together, the middle one widest, and the superior one placed near the suture and revolving on the spire; the middle one is concealed on the spire, by the suture: *aperture* much dilated, ovate, acute above: *labium* a little flattened: *labrum* widely and regularly rounded, without any protrusion near the base: *base* slightly angulated, without any sinus or undulation: *umbilicus* none.

Inhabits Falls of the Ohio. Length, less than half an inch. Var. a. Inferior band obsolete. Var. b. Bands obsolete.

This species is allied to the preceding, but is obviously distinct in its general appearance; the *volutions* are destitute of a shoulder, and the aperture is ovate, acute above. It is a pretty shell, the bands being very conspicuous, strongly contrasting with the yellow general color, particularly in the young and half grown shell.

I obtained about a dozen specimens on the rocky flats of the Falls of the Ohio, at the lower end of the island which is nearest to Louisville.

M. dopygis. Shell oblong conic ovate, not remarkably thickened: *spire* as long as the aperture, or rather longer, much eroded, with a broad revolving band near the suture, occupying more than half the surface: *whirls* about five, hardly round-

ed: *suture* moderately impressed: *body whirl* yellowish, with two equidistant rufous, revolving lines, of which the superior one is much broader and its locality a little flatter than the general curvature: *aperture* ovate, acute, above, moderately dilated: *labium* with calcareous deposit, particularly above: *labrum* not projecting near the base, nor arquated near its junction with the second volution: *base* regularly rounded.

Inhabits Falls of the Ohio. Length half an inch; breadth, nearly a quarter of an inch. Var. a. Color dark brown; bands obsolete.

I found this species in great abundance on the rocky flats at the Falls of the Ohio, where they were left by the subsiding of the river, in company with numerous other shells. In old specimens the spire is very much eroded; the eroded part is white.

PALUDINA, LAM.

P. transversa. Shell transverse, depressed, orbicular: *spire* convex: *whirls* three and a half; with numerous minute, slightly elevated revolving lines: *suture* not widely indented: *body whirl* very convex, short: *umbilicus* small: *operculum* pale fulvous.

Greatest width, two-fifths of an inch. Inhabits Louisiana.

We obtained two specimens in the marshes near New Orleans. It is much wider in proportion to the length than any other species I have seen, excepting in this respect even *M. subglobosa*, Nob., and especially *P. intertexta*, Nob., of which latter, in fact, I at first supposed it to be the young, in consequence of its rotundity and the similarity of its capillary lines; but inasmuch as the number of its whirls is nearly the same, whilst the magnitude differs so greatly, I have separated it as a different species.

P. intertexta. Shell subglobose, yellowish-green or brownish, wrinkled, and with minute, very numerous, obsolete, revolving, deciduous lines: *spire* depressed conic, obtuse, truncated, eroded at tip: *volutions* nearly four: *suture* rather deeply indented: *umbilicus* closed by the lateral extension of the columella.

Greatest breadth, from four-fifths to one inch; length about the same. Inhabits Louisiana.

We collected many of these shells in the marshes near New Orleans and on the banks of the Carondelet canal. It is re-

markable for its globular form and for the numerous obsolete lines which seem like equidistant deciduous corrugations of the epidermis, having no effect whatever in modifying the calcareous surface, upon which it exhibits no trace.

P. elongata, Swainson. Capt. Leconte presented me with a shell which, he informed me, he found in the river St. John, Florida. I described it nearly four years since under the name of *multilivata*; but, recently, being about to publish it, on a more attentive examination and comparison with a specimen of the *elongata* from Calcutta, given to me by Mr. Hyde of Philadelphia, I have concluded that it varies from that specimen, only in having the umbilicus a little smaller.

P. subpurpurea. Shell oblong, subovate, olivaceous, with a tinge of purple more or less intense, sometimes hardly perceptible: *spire* rather obtuse, terminating convexly: *whirls* five, wrinkled, equally convex: *suture* impressed, but not very profoundly: *aperture* much widest in the middle; narrower above: *within* glaucous, somewhat perlaccous: *labrum* rectilinear from the middle upwards: *umbilicus* none.

Length, about one inch; greatest breadth, four-fifths of an inch.

An inhabitant of Fox River, an arm of the Wabash. It is very distinct from any other species I have seen. The labrum exhibits no curvature from the middle almost to its junction with the penultimate volution.

AMPLURIA, LAM.

A. rotundata. Shell remarkably globose; length and breadth equal, dark brown, but becoming olivaceous towards the aperture: *spire* but little elevated: *suture* moderately impressed: *body whirl* a little undulated instead of being wrinkled; these undulations being very perceptible to the finger within the shell: *aperture* within on the margin thickened equally all round and fulvous, with a slight groove for the reception of the operculum, hardly visible but palpable: *within* somewhat perlaccous; a little darker on the columella: *umbilicus* small, narrow: *operculum* calcareous, deeply and concentrically rugose, so as to appear stratified; nucleus on the side towards the labium, sub-marginal.

Length, less than one inch and four-fifths; greatest breadth, about the same.

For this interesting species, we are indebted to Capt. Le-Conte, of the Topographical Engineers, who informed me that he found it in St. John's River, in Florida.

It is most closely allied to the *A. globosa*, Swainson, a native of the rivers of India. But that shell is rather less globose and does not appear to have the almost regular, but slightly elevated and very numerous undulations so perceptible towards the aperture on the body whirl of this species; which has also a few hardly perceptible, distant, brownish bands, particularly towards the base. It may, however, be only a variety of that species.

As the name *depressa*, of the Appendix to Long's Expd. p. 264, is preoccupied by Lamarck for a fossil species; it may be changed to *paludosa*.

A. flagellata. Shell subglobose, olivaceous brown, with 15 or 16 revolving, dull reddish brown, slender bands: *spire* conic, moderately elevated, acute: *body whirl* regularly rounded, more obviously undulated or obtusely wrinkled near the aperture: *umbilicus* free, obvious: *labrum* a little dilated: *within* reddish brown: *labium*, *columella*, and margin of the labrum white: *operculum* horny.

Length, over one inch and a half; greatest width, one inch and two-fifths. Inhabits Mexico.

Occurs in plenty a short distance below Vera Cruz. We found them immediately behind the sand-billocks of the coast, in situations which, in rainy seasons are covered with fresh water. We did not see a living specimen; they were mostly decorticated and bleached. Than *A. depressa*, Nob., (changed to *paludosa*, Nob., as the name is preoccupied,) it has a more elevated and acute spire, larger umbilicus and more regularly rounded body whirl. I am unacquainted with the *A. linearis*, Perry, which he supposes to be a native of the coast of North America.

V A L V A T A, MULL.

V. humeralis. Shell subglobose, depressed: *spire* convex, not prominent: *whirls* three and a half, with the shoulder depressed, plane; wrinkled across, or rather with slightly raised lines: *aperture* appressed to the penultimate whirl, but not interrupted by it: *umbilicus* rather large.

Greatest breadth, less than one-fifth of an inch. Inhabits Mexico.

Differs from *V. sincera*, Nob., of the North-west Territory, in being more depressed, and in having a shoulder or plane surface near the suture. The umbilicus is larger than that of the *V. piscinalis*, Mull., and the spire more depressed; that species is also destitute of the depressed shoulder.

LYMNEUS, LAM.

L. caperatus. Shell suboval, a little oblong, obscurely yellowish horn color: *spire* half the length of the mouth: *apex* acute: *whirls* slightly wrinkled across, and with very numerous, equal, subequidistant, elevated, minute, revolving lines: *suture* not very deeply impressed: *aperture* rather dilated; fold of the *labium* not profound.

Inhabits Indiana.

The remarkable character of this species consists in the numerous revolving lines with which the surface is marked; but these are so minute as to require the aid of a magnifier to bring them to view. It was found on land subject to inundation, near New Harmony, by Dr. Troost.

L. attenuatus. Shell elongate turreted, somewhat translucent: *spire* slender, attenuated, acute: *whirls* six or seven, with but a very slight convexity; wrinkles more distinct towards the aperture: *body whirl*, measured at the back obviously less than half the total length.

Length, one inch. Inhabits Mexico.

This species abounds in the ditches and ponds in the vicinity of the Capitol. It is more nearly related to *L. reflexus*, Nob., than to any other known species of North America; but it is only necessary to compare the two in order to perceive a wide difference between them. The present is smaller and proportionally more slender, and the spire is more attenuated.

SUCCINEA, DRAF.

S. vermeta. Shell suboval, yellowish, very thin and fragile, somewhat diaphanous, with nearly three very oblique volutions: *whirls* very much rounded, wrinkled: *suture* very pro-

foundly impressed: *spire* rather prominent and acute: *aperture* ovate; the superior termination rounded.

Inhabits margins of ponds near New Harmony.

This species is remarkable for the very deep indentation of its suture, giving to the whirls of the spire the appearance of being almost separated from resting on each other; and by this character it may be readily distinguished from the other species of this country. It was found by Dr. Troost.

S. undulata. *Shell* suboval, pale yellowish, translucent, fragile: *volutions* three and a half: *spire* moderate, wrinkles obsolete; *body whirl* wrinkled, or rather slightly undulated: *columnella* narrowed, so as to exhibit the appearance of an interior umbilicus when viewed with a lens from the base.

Length, about half an inch. Inhabits Mexico.

Very similar to *S. ovalis*, Nob., but the suture is not so deeply indented, and it has from one-half to three-fourths of a whirl more; the surface of the body whirl, also, is rather undulated than wrinkled. One of the individuals lived nearly twelve months in my cabinet without any apparent sustenance.

P U P A, L A M.

P. placida. *Shell* dextral, cylindrical conic, pale yellowish horn color: *apex* whitish, obtuse: *whirls* six and an half, somewhat wrinkled: *suture* moderately impressed; *aperture* unarmed, longitudinally oval, truncate a little obliquely above by the penultimate volution: *columnella* so recurved as almost to conceal the umbilicus: *labrum*, with exception of the superior portion, appearing a little recurved when viewed in front, but when viewed in profile this recurvature is hardly perceptible: *umbilicus* very narrow.

Length, over three-tenths of an inch. Inhab. Massachusetts.

For this shell I am indebted to Dr. T. W. Harris, of Milton, from whom I have received many interesting species of our more northern regions. At first view it might be mistaken for the *P. marginata*, Nob., but it is quadruple the size, and the labrum is not reflected and thickened.

BULIMUS. BRUG.

B. alternatus. Ovate-conic, with alternate gray and brownish longitudinal vittaæ.

Inhabits Mexico.

Shell umbilicated, ovate-conic, with longitudinal lines, subequal, gray and light brownish vittaæ; the brown is paler, almost approaching, in some instances, a drab; the white vittaæ consists of more or less confluent, transverse, irregular lines, and small spots: *whorls* about six, a little convex: *suture* not profoundly impressed: *labrum* (in some specimens) with a thickened line or rib on the inner submargin: *within* white, with a perlaceous tinge.

Length, one inch and one-fifth; greatest breadth, seven-tenths.

This species appears to be not uncommon in Mexico, as many specimens were sent to me by Mr. Maclure; but from what particular locality I know not.

B. undatus, Brug. Occurs in some parts of Mexico.

I found a specimen near the road from Vera Cruz to the city. The late Mr. Elliott of Charleston presented to me a *Bulimus* which I described with the name of *veses*; but on comparing it with the present species, I think it may be considered as a variety; it is rather less ventricose, the longitudinal lines are very slender and pale, and the transverse lines much more distinct.

It inhabits trees on the south point of Florida.

B. s. sp. rastrus. Elongate subovate, about six banded.

Inhabits Mexico.

Shell conic, or elongate subovate, umbilicated; whitish or white, with about six interrupted, more or less confluent, dark rufous bands: spire as long or rather longer than the aperture, with three or four widely interrupted bands: *suture* not very deeply impressed: *whorls* a little convex: *labrum* widely curved a little outwards: *columella* rather wide at its origin.

Length, one inch and a half: greatest breadth, excepting the lip (parallel, of course, to the suture,) seven-tenths of an inch.

I obtained it on the side of the road between Vera Cruz and the city of Mexico.

B. meus. With crowded, minute, transverse striae.
Inhabits Mexico.

Shell conic or elongate ovate, slightly angulated on the middle of the volutions, and covered with minute, undulated, impressed, capillary lines; whitish with maculated bands: *suture* not deeply impressed: *aperture* much shorter than the spire: *labrum* exteriorly simple, interiorly with a thickened submargin: *columnella* short, recurved: *umbilicus* small, but distinct: *spire* with the angulation concealed by the suture: *body whorl* with the angulation almost obsolete.

Length, thirteen-twentieths of an inch; greatest breadth, (parallel to the suture) three-tenths.

I found this species on the road between Vera Cruz and Mexico. As I possess only the "Tableaux Systematiques" of Ferussac's splendid work, the preceding species of *Bulinus* are offered with considerable hesitation; but those who possess that work, can readily detect an error if there be one.

NOTE.—*Bulla fluviatilis*, Nob., seems to be no other than the very deceptive young of our common *Planorbis*.

ANCYLUS.

A. tardus. *Shell* conic-depressed: *apex* behind the middle, obtuse, rounded, inclining backward but not laterally: line from the apex to the posterior tip rectilinear; line from the apex to the anterior tip arcuated: *aperture* oval, not distinctly narrowed at one end.

Length, a little over three-twentieths 4-25: breadth, one-tenth of an inch.

Differs from *A. rivularis*, Nob., which has the apex leaning towards one side and the aperture narrower at one end. It is less elongated than *fluviatilis*, Drap., which has an acute and laterally inclined apex.

It inhabits the Wabash River.

